

LUKAS, NACE, GUTIERREZ & SACHS

CHARTERED

1111 NINETEENTH STREET, N.W.

SUITE 1200

WASHINGTON, D.C. 20036

(202) 857-3500

RUSSELL D. LUKAS
DAVID L. NACE
THOMAS GUTIERREZ
ELIZABETH R. SACHS
GEORGE L. LYON, JR.
PAMELA L. GIST
DAVID A. LAFURIA
TERRY J. ROMINE
J. JUSTIN McCLURE
MARILYN SUCHECKI MENSE
PAMELA GAARY HOLRAN
B. LYNN F. RATNAVALE

* NOT ADMITTED IN D.C.

CONSULTING ENGINEERS
THOMAS G. ADCOCK, P.E.
MEHRAN NAZARI
ALI KUZEHKANANI
SHAHRAM HOJATI, D.S.C.
LEROY A. ADAM
LEILA REZANAVAZ
FARID SEYEDVOSOGHI

OF COUNSEL
JOHN J. MCAVOY
J.K. HAGE III*

TELECOPIER
(202) 842-4485

Email: lngs@fcclaw.com
http://www.fcclaw.com

WRITER'S DIRECT DIAL

(202) 828-9471

EX PARTE OR LATE FILED

January 26, 1998

HAND DELIVERED

Magalie Roman Salas, Secretary
Federal Communications Commission
1919 M Street, NW Room 200
Washington, DC 20554

RECEIVED

JAN 26 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

RE: **EX PARTE PRESENTATION**
PR DOCKET NO. 92-235

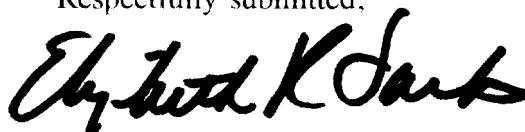
Dear Ms. Salas:

On January 26, 1998, Steven Fulford, David George, Ralph Haller and the undersigned, representing ComSpace Corporation ("ComSpace"), met with Commission Powell and Peter Tenhula of his staff to discuss ComSpace's development of DC/MA Technology. As part of that discussion, ComSpace recommended that the FCC adopt rules in the above-referenced rule making proceeding to provide for channel exclusivity, mandatory dates for migration, and economic incentives to implement more efficient technologies. A written presentation was distributed and reviewed during the meeting. A copy of that presentation is attached hereto.

In accordance with Section 1.1206(b) of the Commission's Rules, two copies of this letter are hereby filed with the Secretary's office and a copy of this filing is being sent today to the FCC personnel present during the meeting.

Kindly refer any questions or correspondence regarding this matter to the undersigned.

Respectfully submitted,



Elizabeth R. Sachs
Attorney for ComSpace Corporation

cc: Commissioner Michael Powell
Peter A. Tenhula, Esq.

No. of Copies rec'd
List ABOVE

0+Y



ComSpace
Corporation

DC/MA™ TECHNOLOGY

(DYNAMIC CHANNEL MULTICARRIER ARCHITECTURE)

INCREASING SPECTRAL EFFICIENCY

January 26/27, 1998

Washington, D.C.



ComSpace
Corporation



ComSpace
Corporation

- ◆ **Steven E. Fulford, President & CEO**
- ◆ **David L. George, Executive Vice President & CTO**
- ◆ **Ralph A. Haller, Special Consultant**

The Company was founded by Steven E. Fulford and David L. George in 1993 on their belief that the two-way radio industry needed a new technology that could increase capacity economically for all operations regardless of frequency band.



ComSpace
Corporation

COMSPACE™ PREMISE

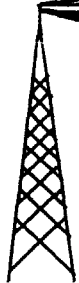
**TO DEVELOP TECHNOLOGY AND PRODUCTS THAT
INCREASE THE CAPACITY OF AND ADD FEATURES
TO WIRELESS COMMUNICATIONS SYSTEMS.**



DCMA™ TECHNOLOGY



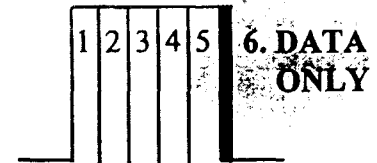
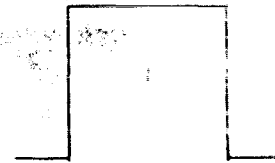
Conventional FM (25kHz) Mode



DCMA™ Mode
5 Voice/Data Channels (9600 baud)



1 Data Only (2400 baud)



ComSpace
Corporation

WHO NEEDS THIS TECHNOLOGY? (partial list)

CMRS Providers

Public Safety

Garbage Trucks

Medical Services Laboratories

Excavating Contractors

Electrical contractors

Heating & A/C Companies

Plumbers

Landscapers

Concrete Ready-Mix

Concrete Finishers

Couriers

Short Haul Trucking

Alarm Companies

Security Services

Maintenance Departments

Security Departments

Food Deliveries

Remodeling

Roofers

School Buses

Wreckers

Road Construction

Hotel Shuttles

Taxi Service

Limo Sservice

HOW ECONOMIC IS DC/MA™?

DALLAS, TEXAS EXAMPLE TO EXPAND A ONE CHANNEL SYSTEM TO FIVE CHANNELS

	<u>FM</u>	<u>DC/MA™</u>
COST OF EQUIPMENT FOR 5-CHANNEL SYSTEM	\$ 93,360 ¹	\$ 100,000 ²
COST OF ACQUIRING 4 NEW CHANNELS	\$ 1,200,000 ³	
TOTAL		

NET SAVINGS: $\$1,293,360 - \$100,000 = \$1193,360$

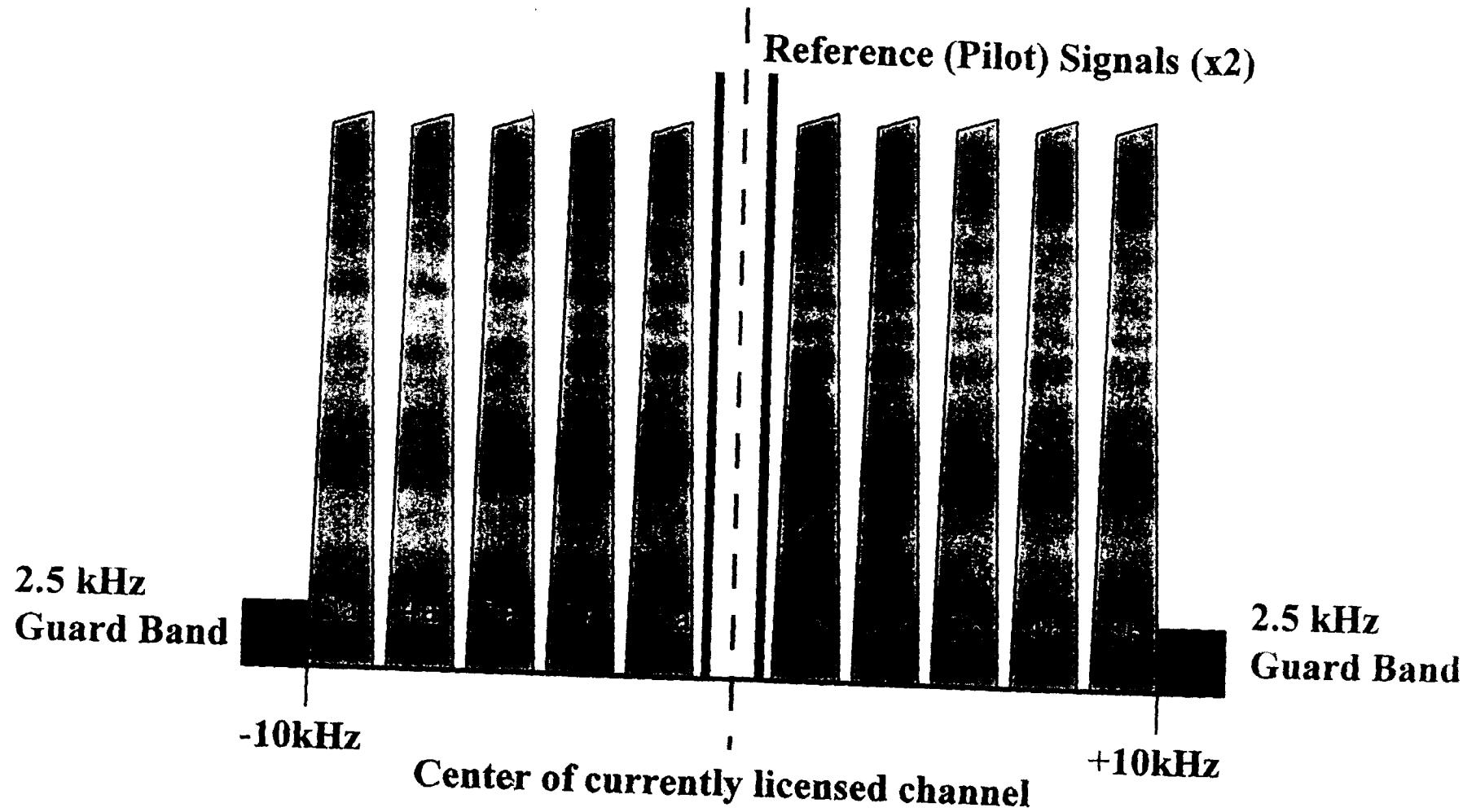
¹Uniden Quote 10/07/97

²Target Price

³Based on a five channel SMR system in Dallas, TX having an estimated market value of \$1,500,000

ComSpace
Corporation

WHAT IS DC/MA?



**FIVE DCMA™ CHANNELS
IN A SINGLE 25kHz CHANNEL!**

WHY WILL LICENSEES BUY DC/MA™?

- ◆ **5X CAPACITY IMPROVEMENT**
- ◆ **SIMPLE UPGRADE PATH - EASY TO RETROFIT**
- ◆ **USES SAME SITE AND ANTENNA SYSTEM**
- ◆ **LOW COST**
- ◆ **NEW FEATURES**

HOW DOES THE PUBLIC BENEFIT FROM DC/MA™?

- ◆ IMPLEMENTED ON EXISTING ALLOCATED CHANNELS
DECREASES DEMAND FOR NEW SPECTRUM.
1 EXISTING CHANNEL = 5 NEW CHANNELS!
- ◆ INCREASED COMMUNICATION PROVIDER CHOICES
- ◆ MORE CAPACITY -- MORE SERVICES
- ◆ LOWER COST BASED ON COMPETITIVE "MARKET FORCES"

REGULATORY ENVIRONMENT

470 MHz AND ABOVE

ALREADY THERE! NO CHANGES NEEDED!

- 1) COMMERCIAL DC/MA PRODUCT IS UNDER DEVELOPMENT!**
- 2) MULTIPLE MANUFACTURERS**
- 3) BOTH SUBSCRIBER AND BASE STATION PRODUCTS**

470 MHz AND BELOW

**ADOPTION OF 3 ADDITIONAL PROVISIONS
WOULD FURTHER PROMOTE
IMPLEMENTATION OF DC/MA™
AND
OTHER SPECTRALLY EFFICIENT TECHNOLOGIES TO
“ALLOW MARKET FORCES TO DECIDE”**

FIRST -- CHANNEL EXCLUSIVITY

WE RECOGNIZE YOU HAVE CHOSEN PRESENTLY TO DEFER THIS ISSUE

HOWEVER --

**IF ENACTED, WOULD ENCOURAGE NEW TECHNOLOGIES
SUCH AS DC/MA™ AND OTHERS.**

OUR STRATEGY, WHEN IMPLEMENTED, CREATES

“ONE CHANNEL TRUNKING”

ComSpace
Corporation

SECOND -- MANDATORY DATES FOR MIGRATION

AGAIN, THIS ISSUE HAS BEEN DEFERRED --

ENJOYS WIDE INDUSTRY SUPPORT

BUSINESS STRATEGIES REQUIRE TIME FRAMES.

THIRD -- ECONOMIC INCENTIVES

- ◆ THERE MUST BE ASSURANCE THAT CLEARED CHANNELS ARE RETAINED BY INCUMBENTS IF THEY DEPLOY TECHNOLOGIES THAT MEET F.C.C. EFFICIENCY STANDARDS BY DATES CERTAIN.
- ◆ LICENSING FEES (IF AUTHORIZED BY CONGRESS) MAY ALSO BE STRUCTURED TO ENCOURAGE TRANSITION TO MORE EFFECTIVE FREQUENCY USAGE.
- ◆ THOSE WHO DO NOT MIGRATE TO 2X OR 4X STANDARDS WITHIN SPECIFIED TIME FRAMES SHOULD BE SUBJECT TO SPECTRUM TAKE BACKS.

REFARMING UHF/VHF

F.C.C. DESERVES "HIGH MARKS" FOR:

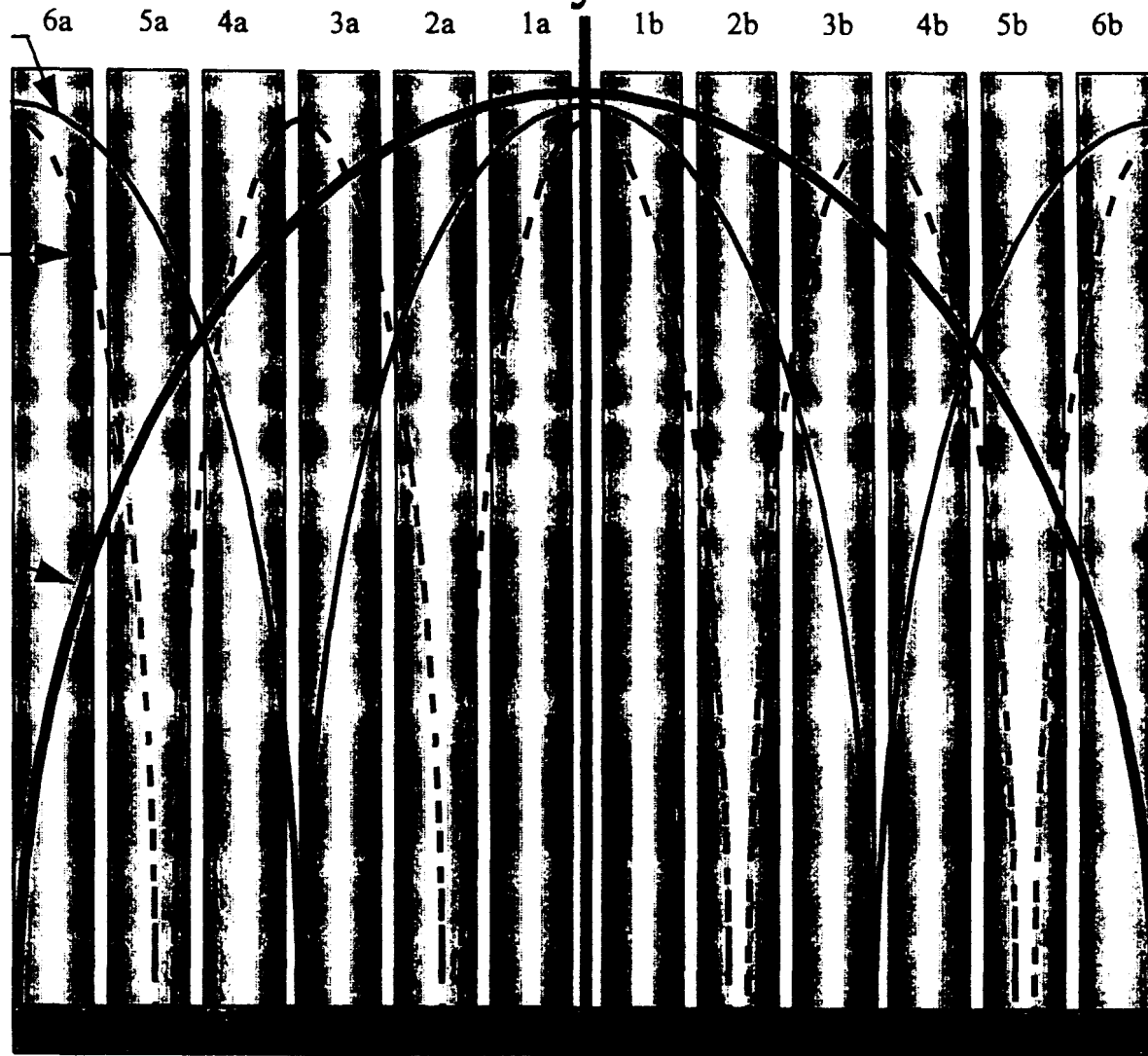
- ◆ **AUTHORIZATION OF MULTI CHANNEL TRUNKED SYSTEMS AT 450-512 MHz WHICH HAVE BEEN SO SUCCESSFUL IN INCREASING TOTAL TRANSMISSION CAPACITY AT 806-894 MHz**
- ◆ **ESTABLISHMENT OF 1/1/2005 TYPE ACCEPTANCE DEADLINE FOR ALL NEW MODELS OF EQUIPMENT TO REQUIRE 4 TIMES CAPACITY WITHIN CURRENT 25 KHz CHANNEL BANDWIDTH (6.25 -Vs- 25 TODAY)**
- ◆ **ADOPTION OF FREQUENCY ASSIGNMENT PLAN THAT UTILIZES CURRENT CENTER CHANNELS AND ALLOWS A SMOOTH TRANSITION TO MINIMIZE ADJACENT CHANNEL INTERFERENCE**

DCMA™ /Refarming Overlay

12.5/15.0 kHz

6.25/7.50 kHz

25.0/30.0 kHz



Center of currently licensed channel

SUMMARY

COMSPACE™ DC/MA™ TECHNOLOGY ALLOWS A 5X INCREASE PER CHANNEL

- PERMITS "ON CHANNEL TRUNKING" -- "ONE 25 KHZ CHANNEL EQUALS FIVE PLUS"
- TRANSITIONS PRESENT CHANNEL PLAN AND MAXIMIZES EFFICIENT SPECTRUM USE. IN PARTICULAR - REFORMING INITIATIVES

MARKET FORCES WILL WORK BEST IF REFORMING INCLUDES PROVISIONS FOR:

- 1) CHANNEL EXCLUSIVITY
- 2) MANDATORY DATES FOR MIGRATION
- 3) USE OF ECONOMIC INCENTIVES

RESULT -- MAXIMUM UTILIZATION OF SCARCE SPECTRUM

ADDENDUM

COMPANY HIGHLIGHTS

- ◆ UTI FORMED IN 1993 BY STEVE FULFORD AND DAVID GEORGE, BOTH FORMER EXECUTIVES OF UNIDEN FOUNDED BY LENBROOK INDUSTRIES, CANADA.
- ◆ UWD FORMED IN 1993; SUBSIDIARY BETWEEN UTI AND WSIL (WIRELESS SYSTEMS INTERNATIONAL - A SPINOUT FROM THE UNIVERSITY OF BRISTOL, BRISTOL ENGLAND)
- ◆ PATENTS FILED ON DYNAMIC CHANNEL MULTICARRIER ARCHITECTURE "DC/MA" TECHNOLOGY IN APRIL, 1995.
- ◆ FULLY FUNCTIONAL DEMONSTRATION COMPLETED IN AUGUST, 1996.
- ◆ RECEIVED \$8.5 MILLION IN 2ND ROUND FUNDING BY SEVIN ROSEN IN OCTOBER, 1997.
- ◆ BOUGHT 100% OWNERSHIP IN DC/MA TECHNOLOGY FROM WSIL AND UWD IN OCTOBER, 1997.
- ◆ CHANGED NAME TO COMSPACE™ CORP.

